

Design Thinking for the Application of Wearable Devices in Smart Living

Sheng-Ming Wang

Department of Interaction Design, National Taipei University of Technology, Taipei,
TAIWAN

Email*: ryan5885@mail.ntut.edu.tw

This paper is part of the research on “The Integrative Research and Design of Wearable Devices and Internet of Thing Technology in the Application of Smart Living Auxiliary Systems”. The main purpose of this paper is to present the application of "Design Thinking Method" on the interdisciplinary integration of wearable devices engineering and interaction design, as they team on the development of wearable devices applied onto smart living. It also provides a mechanism for cultivation of interdisciplinary talents, as wearable devices blooms and attract both sports and IT industry to invest in the advancement of smart living applications. IT manufacturers not only commit to the innovation of wearable devices with various functions and purposes, but also emphasize on the application Scenario Design, Computer-Human Interaction Design, and User Experience Evaluation, in order to increase competitiveness of their products. This research therefore begin with Scenario Design and Design Thinking Method, incorporating technical development and interaction design, proposing the research and development structure for the implementation of wearable devices in smart living applications. Furthermore, the User Experience design and evaluation methods have also been introduced to improve interaction between computer-human interface and smart living. The main themes of scenario design for the wearable devices applied on smart living which will be discussed in this paper includes Ambient Intelligent, Interactive Education, Interactive Entertainment, and Interactive Marketing. The results of this research are then provided to an interdisciplinary team as the benchmark for the prototype development and evaluation. Results shows that the design thinking method proposed can provide basis for the communication between design and technical members in the interdisciplinary team. Meanwhile, the user-oriented design concept, which has been integrated within prototype development and evaluation, provides more innovative applications than the system-oriented methods traditionally used. Future studies could

focused on using Quality Function Deployment (QFD) and Analytic Hierarchy Process (AHP) for further evaluation on the research results.

Keyword: Wearable Device, Design Thinking, Smart Living, User-oriented Design, Internet of Things